

REMARKS

1. In the above-captioned Office Action, the Examiner objected to claims 12 and 15. The drawings are objected to for failing to comply with 37 C.F.R. §1.84(p)(5). Claim 3 is rejected under 35 U.S.C. §112, second paragraph. Claims 1-4, 7, 8, 10, 11, 14, 16, and 18 are rejected under 35 U.S.C. §102(a) in view of Wlodarczyk et al (U.S. Patent No. 6,622,549). Claims 9, 13, 17, and 20 are rejected under 35 U.S.C. §103(a) in view of Wlodarczyk. Claims 5, 6, and 19 are rejected under 35 U.S.C. §103(a) given Wlodarczyk et al. in view of Bunch, Jr. et al. (U.S. Patent No. 5,000,043). These rejections are traversed and reconsideration is hereby respectfully requested.

2. The drawings are objected to for failing to comply with 37 C.F.R. §1.84(p)(5) because "401" is not mentioned in the description. Paragraph 23 of the specification is amended above to add "401." Therefore, the drawings are in compliance with 37 C.F.R. §1.84(p)(5).

3. Claim 3 was rejected under 35 U.S.C. §112, second paragraph. In particular, the Examiner states that because claim 3 sets forth that "the chamber is a combustion chamber," such a claim is contradictory to the statement in the Present Application in paragraph 16 that the chamber only "simulates" a combustion chamber. As stated in paragraph 25 of the Present Application:

This alternative is applicable for the testing of fuel injectors in diesel engines because the pressure sensor is not mounted in the combustion chamber.

Therefore, the specification clearly sets forth as an alternative that the testing of fuel injectors may take place in the combustion chamber of a diesel engine. Thus, the conclusion that the chamber "only simulates" a combustion chamber is based on one phrase in the spec, but does not take into account the entire specification. Claim 3 as submitted is in compliance with 35 U.S.C. §112, second paragraph.

4. Claims 1-4, 7, 8, 10, 11, 14, 16, and 18 were rejected under 35 U.S.C. §102(a) in view of Wlodarczyk et al. Prior to discussing the merits of the Examiner's position, the applicant believes it would be helpful to first briefly describe and characterize the Wlodarczyk reference.

As stated in Wlodarczyk, a fuel pressure sensor 12 is disposed in an opening 16. As Wlodarczyk shows in his FIG. 1, the channel 16 is *not* formed in the nozzle of the injector. As shown in FIG. 1, and as known in the art, the nozzle is in the area of the short channel 22 at the bottom of the injector. Therefore, Wlodarczyk does not teach *an orifice disposed in the nozzle and a pressure sensor adjacent to the orifice*, as stated in independent claim 1; *a fluid cavity disposed in the nozzle and a pressure sensor arranged to measure pressure in a fluid cavity*, as stated in independent claim 10; or *communicating fluid to a pressure sensor through a first orifice disposed in the nozzle*, as stated in independent claim 14. Wlodarczyk clearly shows in his FIG. 1 that the fluid pressure sensor 12 is not in the nozzle of the injector. One of ordinary skill in the art would appreciate that measuring fluid pressure with a sensor disposed in the nozzle of a fuel injector will yield advantageous results over the system of Wlodarczyk.

Hence, the applicant respectfully submits that independent claims 1, 10, and 14 are shown to be allowable over Wlodarczyk and may be passed to allowance.

Furthermore, claims 2-4, 7, 8, 11, 16, and 18, are dependent upon an independent claim that is shown to be allowable. For all these reasons, the dependent claims are themselves allowable.

5. Claims 9, 13, and 17 are rejected under 35 U.S.C. §103(a) in view of Wlodarczyk. Wlodarczyk teaches use of optical fiber sensors to sense fluid pressure inside an injector, and combustion gas pressure in a cylinder. It would not be obvious to one of ordinary skill in the art to replace the optical fiber sensors of Wlodarczyk with piezoelectric quartz transducers lacking such a teaching, which is not present in Wlodarczyk. Even if one were to make such a substitution, the resulting combination would fail to yield the invention as claimed because Wlodarczyk does not teach the elements of independent claims 1, 10, or 14, as well as the dependent claims 9, 13, and 17.

Moreover, claims 9, 13, and 17, are dependent upon an independent claim that is shown to be allowable. For all these reasons, these dependent claims are themselves allowable.

6. Claims 5, 6, and 19 are rejected under 35 U.S.C. §103(a) given Wlodarczyk et al. in view of Bunch, Jr. et al. For the sake of brevity, the Applicant will not repeat the arguments pertaining to the Wlodarczyk reference. Bunch, like Wlodarczyk, fails to teach or suggest *an orifice disposed in the nozzle and a pressure sensor adjacent to the orifice*, as set forth in claim 1, nor the other unique elements of the independent claims. Wlodarczyk does not teach or suggest the invention as claimed, alone or in combination with Bunch, and fails to teach each element of the claims. Therefore, the present invention is not obvious in light of any combination of Wlodarczyk and/or Bunch.

7. No new subject matter is introduced by the above amendments to the specification.

8. The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes that such a communication may advance the prosecution of the present application. Notice of allowance of claims 1-20 is hereby respectfully requested.

Respectfully submitted,

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